

CLAIMS

What is claimed is:

1. An intermediate product carrying apparatus for taking a carrier, which is carried between a plurality of process systems and which stores a plurality of intermediate products, into a desired process system, and then transferring the plurality of intermediate products in the carrier to a single wafer carrying conveyer, which carries the intermediate products in a single wafer state to an intermediate product manufacturing apparatus provided in the desired process system, the intermediate product carrying apparatus comprising:

an intermediate product transfer means provided in the desired process system, for taking the carrier into the desired process system and transferring the intermediate products between the carrier and another carrier.

2. The intermediate product carrying apparatus according to Claim 1, wherein the single wafer carrying conveyer has a plurality of platforms in the carrying direction, and each platform holds at least one intermediate product.

3. The intermediate product carrying apparatus according to Claim 1, wherein the intermediate product transfer means comprises:

- a carrier stocker holding a plurality of carriers;
- a first transfer section taking the carriers carried between process systems into the carrier stocker, and removing the carriers from the carrier stocker;
- an intermediate product stocker storing the intermediate products;
- an intermediate product transfer and order-change means transferring the intermediate products stored in the carrier of the carrier stocker to the

intermediate product stocker, and storing again the intermediate products of the intermediate product stocker into the carrier of the carrier stocker, thereby changing the arrangement order of the intermediate products; and

a second transfer section transferring the order-changed intermediate products of the carrier between the carrier and the single wafer carrying conveyer.

4. The intermediate product carrying apparatus according to Claim 3, wherein the second transfer section comprises at least one transfer robot, and when the second transfer section comprises a plurality of transfer robots, a tray for the intermediate products is provided between the transfer robots.

5. The intermediate product carrying apparatus according to Claim 4, wherein the intermediate products are semiconductor wafers, and a plurality of manufacturing apparatuses for processing the intermediate products are arranged along the single wafer carrying conveyer.

6. An intermediate product carrying method of taking a carrier, which is carried between a plurality of process systems and which stores a plurality of intermediate products, into a desired process system, and then transferring and carrying the intermediate products of the carrier to another carrier, the method comprising:

a carrier take-in step of taking the carrier, which is carried between process systems and which stores the plurality of intermediate products, into the desired process system;

an intermediate product transfer step of transferring the intermediate products stored in the carrier, and transferring the transferred intermediate products to a single wafer carrying conveyer; and

an intra-process single wafer carrying step of carrying the intermediate products in a single wafer state to an intermediate product manufacturing apparatus provided in the process system by the single wafer carrying conveyer.

7. The intermediate product carrying method according to Claim 6, wherein the intermediate products comprises semiconductor wafers, the single wafer carrying conveyer has a plurality of platforms in the carrying direction, and each platform holds at least one intermediate product.

8. In a system including:

a plurality of process systems each including at least one product manufacturing apparatus and a single product carrying conveyer which carries products in a single product state relative to the at least one product manufacturing apparatus; and

a carrier conveyor which conveys carriers between the process systems, each carrier storing a plurality of products;

the improvement comprising:

an intermediate product carrying apparatus disposed in at least one of the process systems, the intermediate product carrying apparatus taking carriers from the carrier conveyor and delivering the products from the carrier to the single product carrying conveyor.